

Maryland in Europe Graduate Programs  
Bowie State University

## **Introduction to Object-Oriented Programming** **INSS 505**

31 March, 2003 – 23 May, 2003

Heidelberg High School

Tuesday and Thursday 1845-2130

**Instructor:** Susan T. Dean  
**Mailing Address:** UMUC – Unit 29216, APO AE 09102  
**Email Address:** sdean@faculty.ed.umuc.edu  
**Consultation:** In classroom 30 minutes before class, other times by appointment.  
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**Course Description:** Introduces the principles and techniques of object-oriented programming and design. The main concepts of the object-oriented programming paradigm as they relate to software development in an MIS environment are explained. *This course satisfies the programming language prerequisite for the M.S. program. No prior programming experience is assumed.*

**Course Goals/Objectives:** Upon satisfactory completion of the course, students should be able:

1. To explain the main concepts of the object-oriented programming paradigm as they relate to software development in an MIS environment.
2. To design, write, and debug programs of moderate complexity using the Java programming language. These programs will incorporate such software constructs as class hierarchies, class inheritance, design of classes, data structures and methods, processing character and array data structures, file input and output, graphical user interface design and event-driven programming, and Java applets.

**Text** C. Thomas Wu, **An Introduction to Object-Oriented Programming with Java.**  
(2<sup>nd</sup> Edition)

**Grading Information:** Grades for INSS 505 will be assigned as follows:

A	90% +	C	70 – 79%
B	80 – 89%	F	Below 70% F(a) or regular non-attendance F(n)

### **Course Requirements:**

2 Midterm Examinations:	30% (15% each)
Final Examination:	30%
Programming Projects:	40%

All exams will be open-book, in-class. There will be seven programming assignments, with significant effort expected outside of class time. See Topics and Assignments section below for exam and program due dates.

Students will need a Java compiler to complete class assignments. Java 1.2, 1.3, or 1.4 compilers will be satisfactory. Compilers may be downloaded from <http://java.sun.com/products/jdk> and some are available on CDROM. The Textpad editor is also recommended (<http://www.textpad.com/>).

### **Turn in the following for Each Assignment**

1. Program source code (.java) and compiled code (.class) on a floppy disk. The disk should be *clearly labeled*, including the exact file name used for this assignment if there are other files on the disk. (Assume that you will be without this disk for a week, so don't give me a disk that contains files you will need sooner than that, and *don't give me your only copy of anything!*)
2. Printout of the Java source code, and of the results of running the program.
3. A brief narrative (use word processing to produce this, please!) describing your experiences in working on this program – the types of errors you encountered, any decisions you made regarding test data (and discussion of why you think this collection of test results is sufficient to demonstrate that the program works correctly), any decisions made during the process of designing your program, etc. If you have received any help with your programming, you should give credit in the lab report. This “lab report” serves two functions – gives you a chance to think about what you have learned from the assignment, and gives me a chance to get some insights about that as well.

### **About Your Instructor: Susan T. Dean**

Dr. Dean earned the BA in Mathematics from Vanderbilt University, and the MS and PhD in Computer Science from the University of Alabama in Birmingham. She has worked at various times as a programmer, programmer/analyst, systems analyst, and project manager in the areas of medical information systems, small business support, and life insurance. Since 1975, she has been involved in teaching and curriculum development in computing, most recently at Samford University in Birmingham, AL. She has served on the Board of Directors and as President of the Consortium for Computing Sciences in Colleges (previously known as the Consortium for Computing in Small Colleges). She serves on the Steering Committee of the CCSC Southeastern Conference. Her areas of interest include curriculum development, database management systems, programming languages, and operating systems.

## Projected Schedule of Topics and Assignments

(All references to Wu, *Introduction to O-O Programming*, 2<sup>nd</sup> Ed.)

Date	Topics	Assignment Due
Tu 1 Apr	Introduction, Intro to O-O Concepts and Java (Ch's. 1 & 2), Mechanics of Using Java	
Th 3 Apr	Java Programming (Ch. 3)	
Tu 8 Apr	Classes (Ch. 4)	ONE of #9-23, pp. 131-137 (Ch.3)
Th 10 Apr	Selection Statements (Ch. 6)	
Tu 15 Apr	Repetition Statements (Ch. 7)	#16 p. 285 OR #21 p. 287 (Ch. 6)
Th 17 Apr	<i>Midterm Exam 1</i> – Chapters 1,2,3,4,6,7	
Tu 22 Apr	Characters, Strings (Ch. 8)	#22 p. 349 (Ch. 7)
Th 24 Apr	Array Processing (Ch. 9)	
Tu 29 Apr	File Input/Output (Ch. 11)	ONE of (1) #15 p. 407, (2) #20 & 21 pp. 408-409, (3) #22 & #23 p. 409. (Ch. 8)
Th 1 May	<i>Midterm Exam 2</i> – cumulative, with major emphasis on chapters 8, 9, 11	
Tu 6 May	Sorting and Searching (Ch. 10)	#3 OR #4 (explain in lab report what would be different with the other choice) pp. 476-477 (Ch. 9), AND in the same program #15 p. 558 (Ch. 11)
Th 8 May	Reusable Classes and Packages (Ch. 12)	
Tu 13 May	GUI Classes and Event-Driven Programming (Ch. 13)	#13 p. 518 (Ch. 10). Create and use at least one reusable and packaged class (Ch. 12).
Th 15 May	Applets (Ch. 5)	
Tu 20 May	Inheritance and Polymorphism (Ch. 14)	#16 p. 656 (Ch. 13), a GUI modification of #22 p. 349.
Th 22 May	<i>FINAL EXAM</i> – cumulative	

### Getting help

I will try to check my email every day, and welcome questions via that mode about your programs. Some of you have my Samford University address, but I would prefer to use my UMUC address for all email related to this course: [sdean@faculty.ed.umuc.edu](mailto:sdean@faculty.ed.umuc.edu)  
When you send questions via email, please be as specific as possible (e.g., don't just say it doesn't work, tell me the text of the error messages or specifically what results you are seeing, from what inputs, that are incorrect). Also, please attach a copy of the .java file(s) and any input data files that I did not give you.

Plan to check the web board <http://webboard.ed.umuc.edu/~mis/> frequently, as I will use it to post information of potential interest to all of you. For example, it is possible that as I help solve a problem that one of you has sent via email, I will realize that there is something that I should tell all of you. It is your responsibility to check the web board – I will not notify you when I put information there.

We do not have access to a computer lab during class time. I will try to allow time at the end of each class to debug problems that you bring on diskette. Using the computer and projection device, I will display these for the class to see. This is not intended to be embarrassing, the goal is to learn from our mistakes. Hopefully, everyone will be able to contribute material for these learning opportunities.

**Academic Policies:** Please refer to the UMUC Maryland in Europe Graduate Catalog, available online at [http://www.ed.umuc.edu/visit/pubs/catalog/grad\\_02-03.pdf](http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf) or from your local Education Center, for information on the following:

**Academic Integrity**  
**Course Load**  
**Exception to Policy**  
**Grade Appeal Process**

**Make-up Examinations**  
**Nondiscrimination**  
**Students with Disabilities**

## **CODE OF CIVILITY**

To promote a positive, collegial atmosphere among students, faculty, and staff, Maryland in Europe has developed the following Code of Civility:

### **Respect**

Treat all students, faculty, and staff with respect and in a professional and courteous manner at all times and in all communications, whether in person or in written communication (including e-mail).

### **Kindness**

Refrain from using profanities, insults, or other disparaging remarks.

### **Truth**

Endeavor to cite only the truth and not knowingly misrepresent, mischaracterize, or misquote information received from others.

### **Responsibility**

Take responsibility for our own actions instead of blaming others.

### **Cooperation**

Work together with other students, faculty, and staff in a spirit of cooperation toward our common goals of seeking and providing quality education.

### **Privacy**

Strive to uphold the right to privacy and not talk about others.

### **Nondiscrimination**

Respect the differences in people and their ideas and opinions and reject bigotry.